

FIG. 1

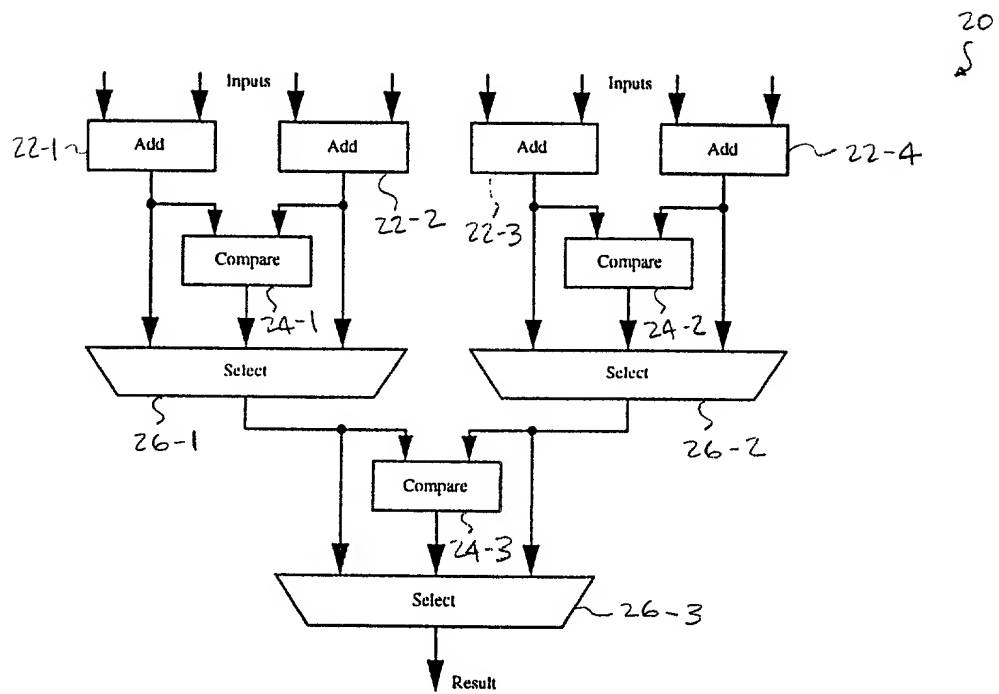


FIG. 2

30
↓

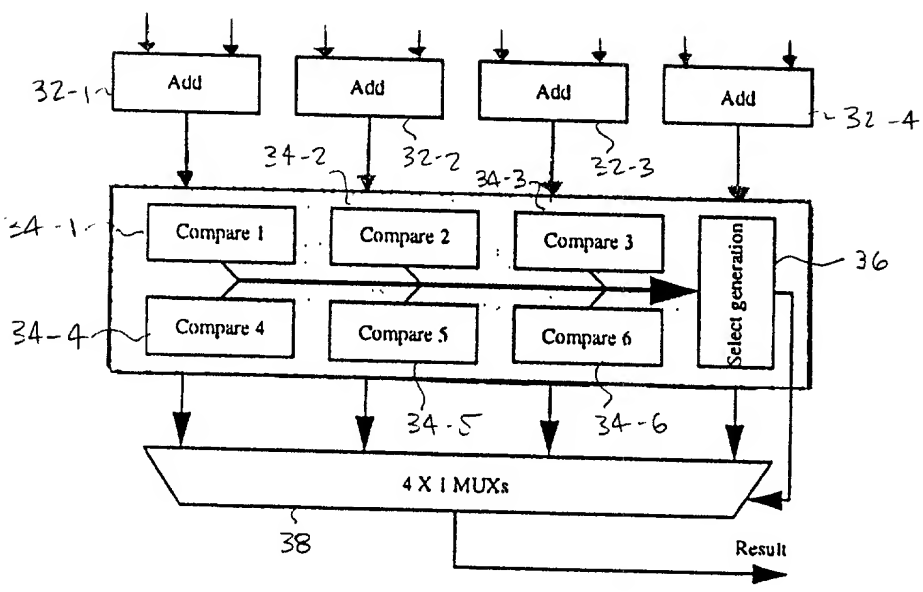


FIG. 3

0	a7	a6	a5	a4	a3	a2	a1	a0	← a
0	b7	b6	b5	b4	b3	b2	b1	b0	← b
1	$\overline{c7}$	$\overline{c6}$	$\overline{c5}$	$\overline{c4}$	$\overline{c3}$	$\overline{c2}$	$\overline{c1}$	$\overline{c0}$	← \overline{c}
1	$\overline{d7}$	$\overline{d6}$	$\overline{d5}$	$\overline{d4}$	$\overline{d3}$	$\overline{d2}$	$\overline{d1}$	$\overline{d0}$	← \overline{d}
								1	← CORRECTION BIT

FIG. 4A

Cout(0)	Cout(1)	Remarks
0	0	$p < q$
0	1	$p = q \Rightarrow p - q = 0$
1	0	Impossible
1	1	$p > q$

FIG. 4B


	t7'	s7	s6	s5	s4	s3	s2	s1	
1	t7	t6	t5	t4	t3	t2	t1	t0	

FIG. 4C

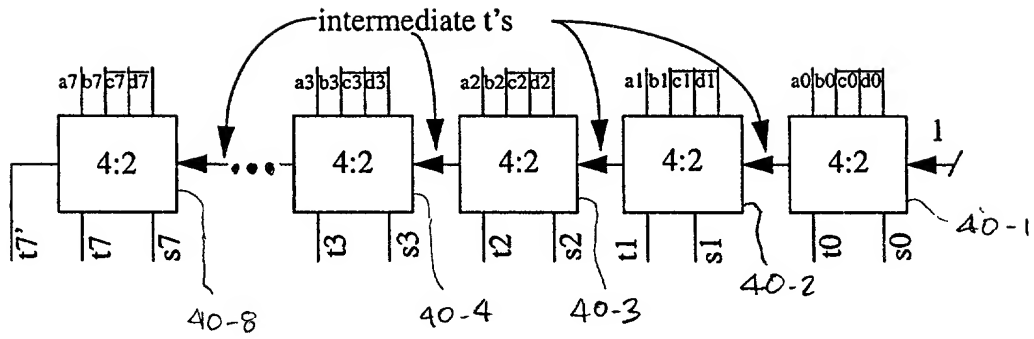


FIG. 4D

40-n

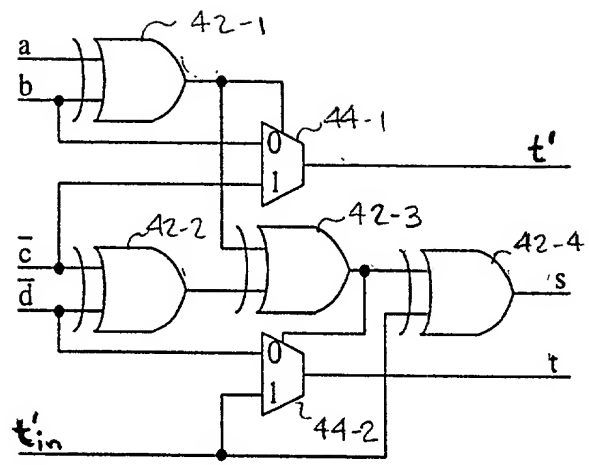


FIG. 4E

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Input a		1	1	0	0	0	1	1	0	
Input b		0	0	1	1	1	0	0	1	
Input c		1	1	1	1	0	0	0	0	
Input d		0	0	0	0	1	0	0	0	
The next 4 rows represent the inputs of 4:2 compression logic, analogous to that represented by Figure 4A										
Input a		0	1	1	0	0	0	1	1	0
Input b		0	0	0	1	1	1	0	0	1
Input \bar{c}		1	0	0	0	0	1	1	1	1
Input \bar{d}		1	1	1	1	1	0	1	1	1
Correction bit										1
t' bits (shaded bits are internal to the network of 4:2 compressors, the unshaded bit is t7')		0	0	0	0	1	1	1	1	1
s bits			0	0	0	1	1	0	0	0
t bits		1	1	1	1	0	1	1	1	
Output of 4:2 compression network; s, t bit vectors: carry output from the MSB indicates the relative magnitudes of a + b and c + d. In this case, Cout = 1 which implies a + b > c + d		0	0	0	0	1	1	0	0	ϕ
		1	1	1	1	0	1	1	1	

FIG. 4F

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Input a		1	1	0	0	0	1	1	0	
Input b		0	0	1	1	1	0	0	1	
Input c		1	1	1	1	0	0	0	0	
Input d		0	0	0	0	1	1	1	1	
The next 4 rows represent the inputs of 4:2 compression logic, analogous to that represented by Figure 4A										
Input a		0	1	1	0	0	0	1	1	0
Input b		0	0	0	1	1	1	0	0	1
Input \bar{c}		1	0	0	0	0	1	1	1	1
Input \bar{d}		1	1	1	1	1	0	0	0	0
Correction bit										1
t' bits (shaded bits are internal to the network of 4:2 compressors, the unshaded bit is t')		0	0	0	0	1	1	1	1	1
s bits			0	0	0	1	1	1	1	1
t bits		1	1	1	1	0	0	0	0	
Output of 4:2 compression network; s, t bit vectors: carry output from the MSB indicates the relative magnitudes of a + b and c + d. In this case, Cout = 0 which implies a + b ≤ c + d (Conditional carries Cout(0) = 0 and cout(1) = 1 in this case)		0	0	0	0	1	1	1	1	φ
		1	1	1	1	0	0	0	0	

FIG. 4G

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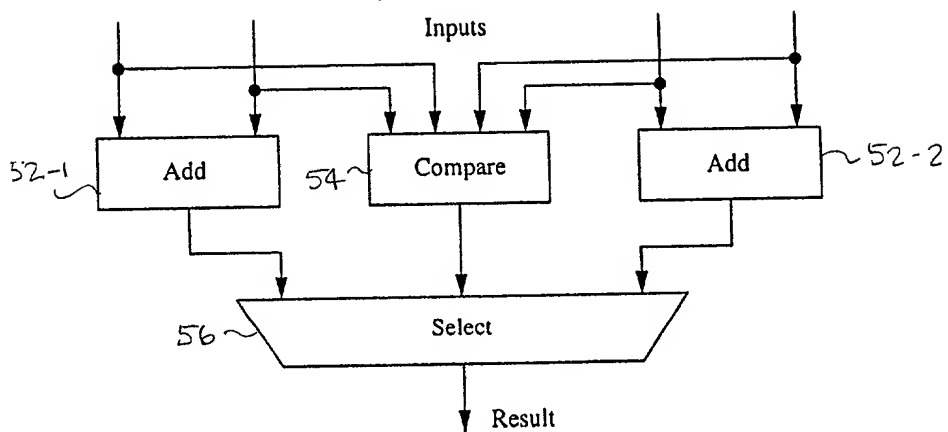


FIG. 5

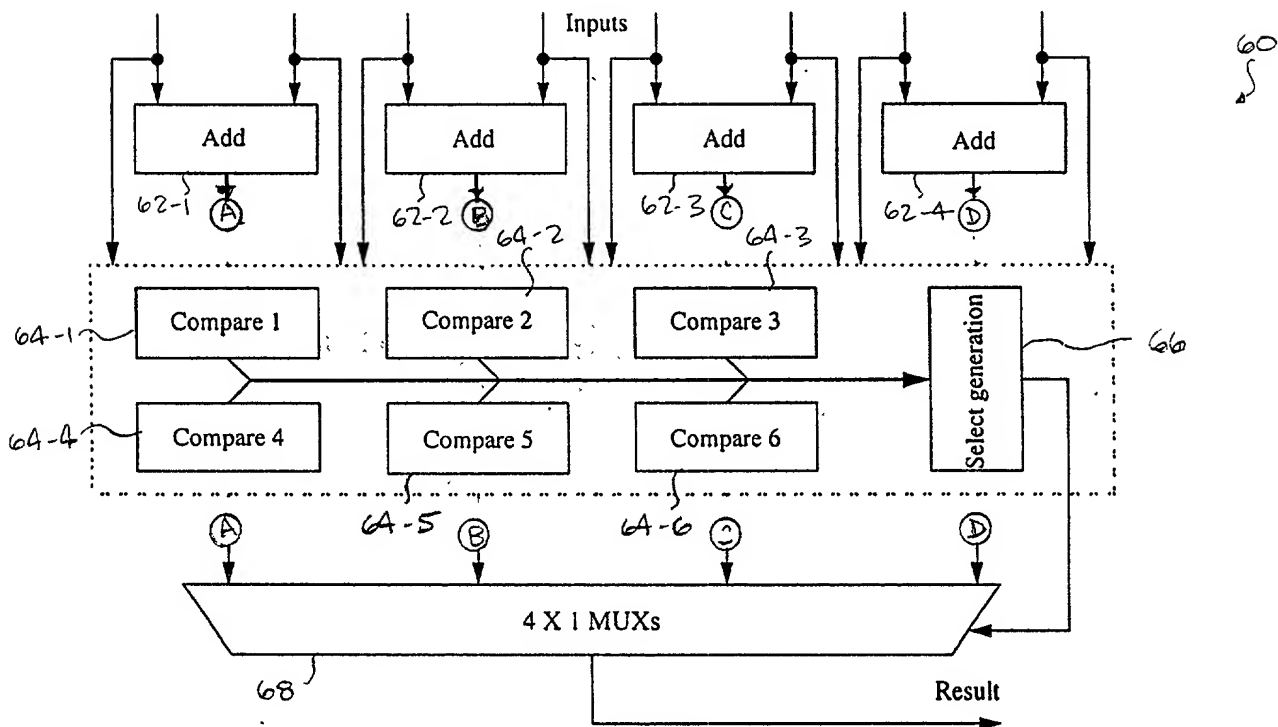


FIG. 6

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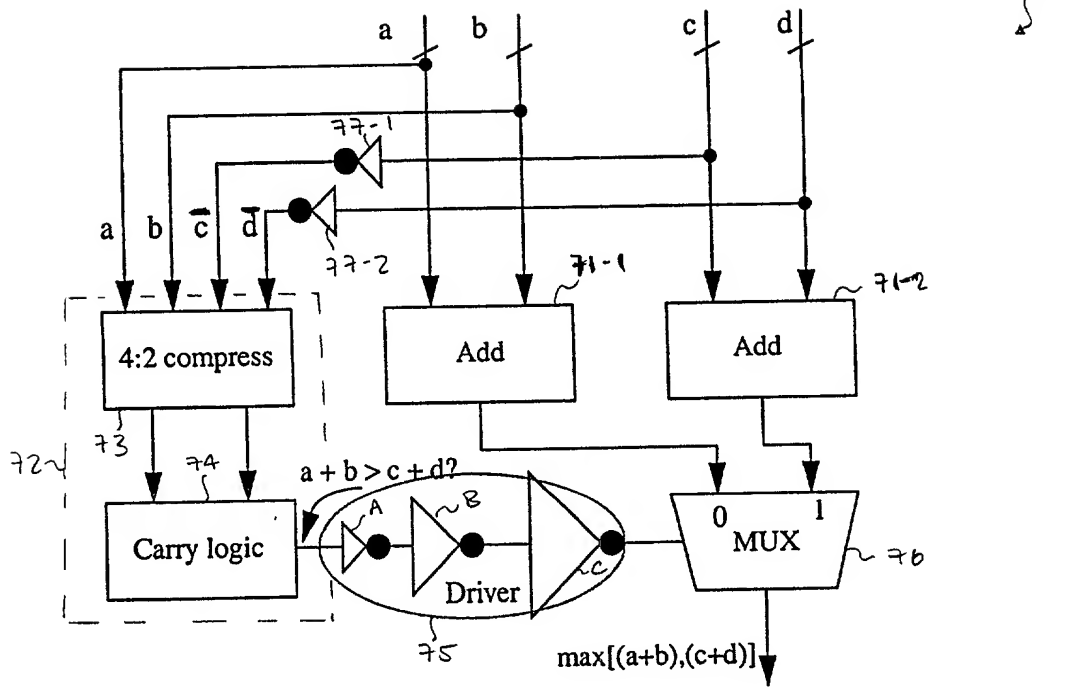


FIG. 7A

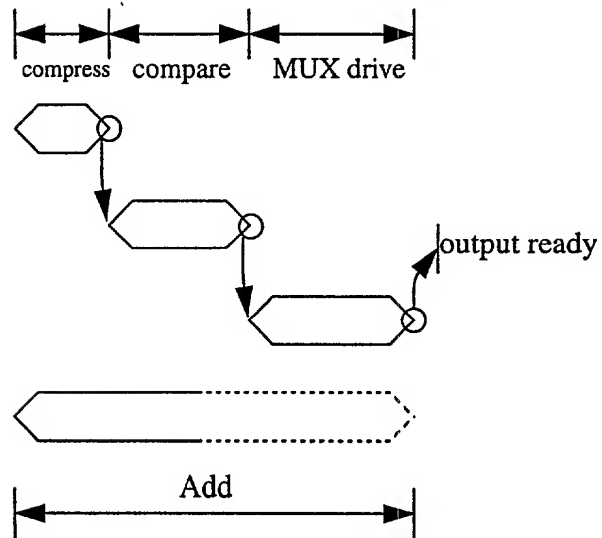


FIG. 7B

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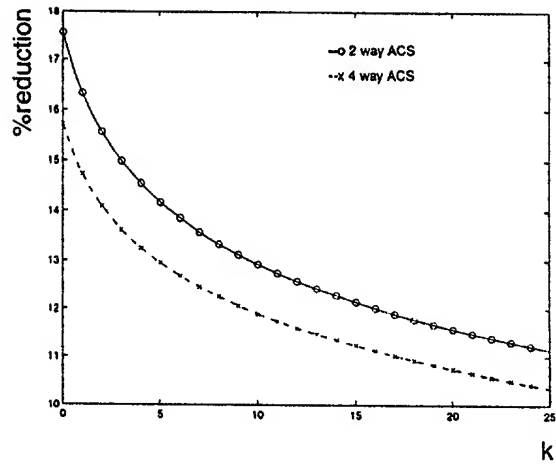


FIG. 8

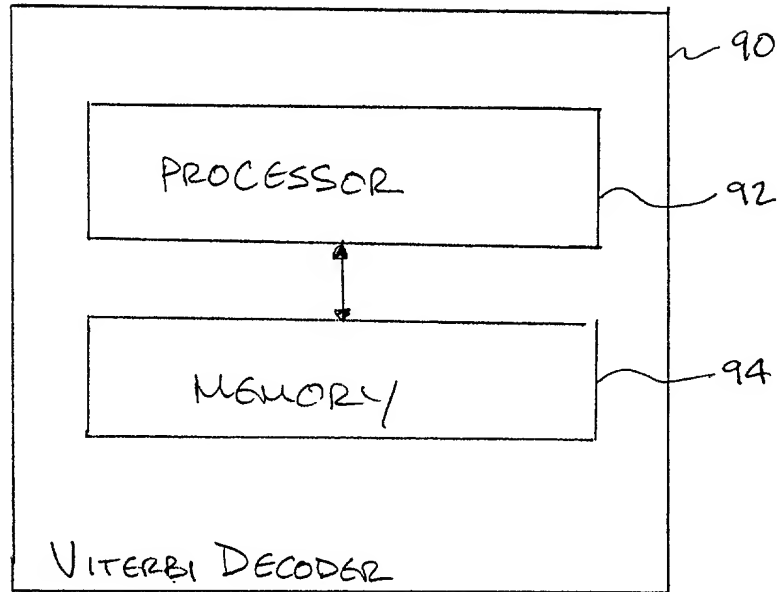


FIG. 9